THE DARWIN EXHIBITION AT THE CAMBRIDGE UNIVERSITY LIBRARY

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APRIL 1982 was the 100th anniversary of the death of Charles Darwin. One of the events that marked this centenary was an exhibition of Darwiniana at the Cambridge University Library organized by Peter Gautrey. Mr. Gautrey, who for almost 20 years has been in charge of the Cambridge Library's extensive Darwin collections, has selected a small number of pictures, manuscripts, and books, each of which portrays — in a vivid and interesting way — an aspect of Darwin's life and work.

The first exhibits show that, as a school boy, Darwin was influenced to collect plants by his father, and to perform chemical experiments by his older brother; and that he was (as he later recollected) "passionately fond" of shooting birds. There is a wryly supplicating letter which he wrote to his family, asking for £20 to purchase a new double barreled shot-gun. His father and three sisters than each contributed £5 to enable him to make this purchase. When he was a student at Christ College, Cambridge, his most passionate interest was collecting beetles. There is a cartoon, sketched by a Cambridge friend, which depicts him riding on the back of a giant beetle and flourishing his collector's net. Under the picture his friend wrote: "Go it Charlie!"

Months after leaving Cambridge he was offered the position of naturalist on the *Beagle*. A letter written by his uncle Josiah Wedgwood, which persuaded his father to let him go on the *Beagle*, describes him (he was then 22½ years old) as "a man of enlarged curiosity." A page from his *Journal* then shows that, as he waited for *Beagle* to sail, he became "very miserable." He was fearful of the hazards of the voyage and suffering from depression and psychosomatic illness, the first signs of his

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future chronic illness. Once the voyage began, however, his illness abated.

The five years of the voyage are depicted by pages from his voluminous geologic, zoologic, and botanical notes. A recently discovered page of his botanical notes vividly describes a Chilean forest, and anticipates the famous "tangled bank" passage at the end of *The Origin of Species*. Also exhibited is his first scientific publication: a 31-page pamphlet (published by the Cambridge Philosophical Society in December 1835, while he was still at sea), made up of extracts from scientific letters which he wrote to his Cambridge friend Professor Henslow. The pamphlet is opened to pages 12-13, where, writing from Argentina in 1832, he speculates that the Argentine land must have "lately risen" from the sea, and he then mentions a fossil tooth "which puzzles even my conjectures." Although his interests were mainly geological, he was also conjecturing about the origin of organic beings; yet he did not have any steady evolutionary thoughts.

Back in England he began searching for causes of evolution in a series of transmutation notebooks. On the first page of his first notebook — prominently displayed— he first wrote "ZOONOMIA." This referred to the book *Zoonomia* by his grandfather, Dr. Erasmus Darwin, which contained a very speculative passage on the possible evolutionary origins of life. Although he was influenced by *Zoonomia*, he was determined that his evolutionary thoughts would be more grounded in facts than those of *Zoonomia*. Two exhibits depict his moment of scientific insight — one of the greatest insights in the history of ideas. There are pages from his third transmutation notebook (excised, lost, and only rediscovered in 1964), where he records how, on September 28, 1838, after beginning to read Malthus' *On Population*, he was stimulated to visualize nature as "a force like a hundred thousand wedges." Yet he does not specify whether this force creates new species or merely preserves existing species. Then there are pages from his *Autobiography* (including some newly discovered early drafts) where — writing 40 years after the event — he recollects how after reading Malthus he was at once stimulated to think of his theory of natural selection. After reading Malthus he was in possession of his theory, but exactly how Malthus first influenced him is unclear.

In the year 1838 he began thinking of getting married, and in some pencil notes (which are exhibited) he wrote that a wife was an "object to be beloved and played with — better than a dog anyhow.... Charms of

music and female chit-chat. These things good for one's health." He was beginning to feel chronically ill. He then became engaged to his cousin Emma Wedgwood. In a letter which is exhibited, Emma then wrote him: "Don't be ill any more my dear Charley till I can be with you to nurse you & save you from bothers." These words remarkably anticipate a marriage in which he would be an invalid and she would be his nurse.

There are exhibits of his 1842 and 1844 outlines of his evolutionary theory, and then the first edition of *The Origin of Species*. Then one of the first changes in *The Origin* which concerned the analogy to a whale, of a bear swimming with wide open mouth catching insects, is shown. Darwin wrote: "Even so extreme a case as this, if the supply of insects were constant, and if better adapted competitors did not exist in the country, I can see no difficulty in a race of bears being rendered by natural selection more and more acquatic in their structure and habits, with larger and larger mouths, till a creature was produced as monstrous as a whale." Since several critics mocked this passage, Darwin—much against his will—deleted it in the second edition of *The Origin*. Today, from what is known about the American black bear, Darwin's observation seems valid. It has been estimated that in the course of preparing five successive editions of *The Origin* Darwin rewrote 75% of the sentences in the first edition from one to five times each. Other exhibits touch on Darwin's work in geology, entomology, botany, and the expression of emotions in man and animals. It has been remarked that, eventually, his work came to encompass the whole field of biology, and that it was never superficial.

Along with his scientific work, Darwin raised a family of seven children. One exhibit shows a fairy tale concocted by some of his children, which was written on the back of his notes on barnacles. "Once on a time," begins the fairy tale, "There lived some fairies in a mountain in a volcano the lava of which spouted up to the moon. When the fairies were in the moon they dug a hole there. The trees there had no leaves but instead had frogs some toads and mice growing on them." In another part of this tale "The flowers instead of petals had feathers and inside of the flowers were grinning faces grinning at you." Thus did the children of the man who imagined the evolution of things imagine the world. A final exhibit shows that four of Darwin's sons had distinguished and varied careers in science, while a fifth son became a banker.

It is hoped that, after its close at Cambridge, the exhibit will be shown elsewhere.